

Improvements in Valve Technology

Abstract

A fluid flow control valve is provided with means for detecting and quantifying valve seat leakage when the valve is in its closed position. Any fluid leaking past the seat flows through an orifice of known, fixed dimensions present downstream of the seat when the valve is in its closed position. Pressure transducers measure a first pressure immediately upstream of the seat, a second pressure between the seat and the orifice, and a third pressure immediately downstream of the orifice. The second and third pressures are used to calculate flow through the orifice, and the calculated flow is used with the first and second pressures to determine the size of a leak path across the seat.